PVD40-500-V-C Surge Diverter

Class II SPD arrester in accordance with IEC 61643-1:2005. Compliance to UL1449 ed.3.

500vdc Surge Protection for PV installations

FEATURES

- 2 mode protection +ve - Earth, -ve - Earth
- Compact solution for solar inverter protection
- 2 pole wide Din 43880 form factor
- Replaceable plug in protection module
- Includes floating-contact alarm output
- Available in a range of DC voltages to 1000vdc.

Applications

- *Grid inter active inverters*
- *Standby inverters*

SPECIFICATIONS

Manufacturers name and model	**Eaton PVD40-500-V-C**
Method of mounting	Din rail mount
Input voltage	450 - 500VDC
Maximum continuous operating voltage - MCOV	530VDC
Service type	+VE – E , -VE - E
Test classification	Class II
Supply current	<10mA
Initial clamp voltage	500VDC
Maximum rated surge current - Ismax 8/20us	40kA
Nominal surge current – Inom 8/20us	20kA
Residual voltage (Vpl) @ Inom 20kA, 8/20uS at terminals	1.6kV
Nominal surge lifetime (In)	20kA (8/20uS), 20 times
Internal protection	MOV thermal disconnect device.
External disconnector (if required)	Gg/Gl HRC fuses, 125A maximum.
Terminations	Main terminals multi strand 25mm^2 Alarm terminals 1.5mm^2
Alarms/indicators	Flag indicator, alarm relay contact 250VAC/24VDC, 2A
Location Category	Indoor
Enclosure rating	IP20
Applicable standards.	IEC61643-1:2005, UL1449 ed.3
Dimensions	90mm (H) x 36mm (W) x 68mm (D). excluding alarm connector
Weight	180g
Environment	-10 to 60C, 0-90%RH
Warranty	12 months, workmanship and materials

FUNCTIONAL DESCRIPTION

The PVD40-500-V-C is designed to protect photovoltaic solar panel inverters from harmful transients by diverting excess energy to earth from +ve and –ve conductors to earth.

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This model (PVD40-500-V-C) is designed for 450-500vdc systems. If your power system is a different voltage, this model is NOT suitable.

Please contact your supplier for a suitable model to suit your application.

OPERATION

The operational status of the unit is shown by a flag indicator on the front of the unit. In normal operation, the flag is green. If the unit becomes damaged, the flag changes to red, indicating that replacement is necessary. A contact alarm output is fitted to the base of unit and will change over if the unit is faulty.

WARRANTY

Eaton warrants this unit against faulty parts and workmanship for a period of 12 months from the date of purchase. If this product fails to operate correctly, please contact your Eaton representative. This warranty doesn't cover neglect or intentional misuse. As this product is intended for use in electrically harsh environments no claim is made of suitability for purpose. This unit is designed to reduce the likelihood of damage. Please also note that an excessive surge, such as from a direct lightning strike to the site or a power system fault, may cause damage to the unit and render it inoperable. A unit that has been damaged in this way is not warrantable.

For installation details, See over page.

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INSTALLATION

PROCEDURE:

1. **CHECK**
   - Always work safely – disconnect power before making connections.
   - All wiring must be carried out by suitably qualified personnel according to the applicable standards.
   - Check for correct operating voltage and power system. This model (PVD40-500-V-C) is designed for DC power systems in the range of 450 – 500VDC. **If your power system is a different voltage, this model is not suitable**. Please contact your supplier.
   - Always use the correct size HRC fuses.
   - Always use Gg or Gl-rated fuses. Do not use delay types or 'semiconductor' fuses.
2. **INSTALL**
   - Locate a fuse position as close as possible to the incoming DC breaker.
   - Install fuse holders or fuse-switch if required.
   - Locate a suitable position for the SPD, ensuring adequate space for cables. Do not install above heat-generating objects or in any position that is exposed to weather.
3. **CONNECT**
   - Connect wiring - refer to connection diagrams. If using stranded cable, always use wire ferrules for lowest resistance and to prevent damage to the wire.
   - Keep termination length as short as possible. **Do not wire in extra loops or cable length.**
   - Use a suitably-rated cable for alarm connections. Cable should be rated for operation at the system voltage and should be 0.5mm^2 to 1.5mm^2.
4. **NOTES:**
   - 125A fuses are rated such for maximum surge rating. On services below 125A, fit a fuse lower in value to the service size.
   - Wiring from fuse to SPD is carrying surge currents only, not load current. This means that smaller cables may be used than is normal for the current rating.
   - If using under-sized cables, some energy authorities require double insulation (i.e. sleeving) of the cables.
   - Unplug the alarm connector for termination.
   - Do not Megger test cabling with unit connected – unit may be damaged.

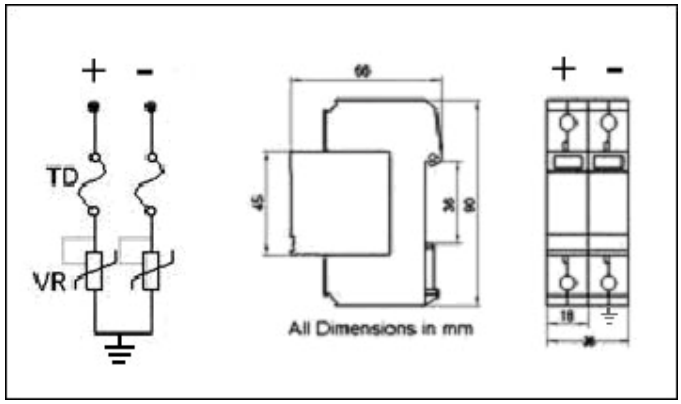
EARTHING

For proper operation, all surge diverters rely upon a good earth connection:

- The main earth wire (from earth link on switchboard to ground rod or system) MUST be as short and direct as possible. Extra cable must not be looped.
- Earth connections from the unit to earth link **MUST** be as short as possible.

Failure to consider the above points can result in improper operation of the unit and possible damage to the installation.

Electrical configuration diagram



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